ABSTRACT

The present invention relates to a process for preparing polythiophenes comprised of unit structures of the general formula 1:

$$R_1O$$
 OR_2
 S

where R_1 and R_2 independently represent hydrogen or a $C_1 \sim C_4$ alkyl group, or together represent an optionally substituted $C_1 \sim C_4$ alkylene group, preferably an optionally alkylsubstituted methylene group, an optionally $C_1 \sim C_4$ alkylor or phenyl-substituted 1,2-ethylene group, a 1,3-propylene group or a 1,2-cyclohexylene group. More specifically, the process according to the present invention is characterized by the fact that it is performed by cationic polymerization from 2,5-dihalothiophene in the presence of an acid catalyst, such as Lewis acid, protic acid, oxygen acid, or polymeric acid. The conductivity of the resulting polythiophene is 255 S/cm under optimal conditions.